What is claimed is:

1. A tire pressure monitoring device for monitoring tire pressure, said monitoring device comprising:

a housing coupled to a tire valve;

said housing having a first pressure chamber, a second pressure chamber, and a flexible membrane, wherein said first and second pressure chambers are separated by a flexible membrane; and

a signaling means located within said housing, wherein said signaling means emits a warning signal when a pressure within the first pressure chamber is greater than a pressure within the second pressure chamber.

2. The tire pressure monitoring device of claim 1 wherein said housing further comprises:

a lens, a main housing, and a lower housing, wherein said lens is coupled to a first end of said main housing and said lower housing is coupled to a second end of said housing.

3. The tire pressure monitoring device of claim 2 further comprising a screw cap that couples said lens to said main housing.

4. The tire pressure monitoring device of claim 3 further including a conductive gasket provided between said lens and said main body.

5. The tire pressure monitoring device of claim 1 wherein said housing further includes at least one battery.

6. The tire pressure monitoring device of claim 1 wherein said flexible membrane is a conductive substance.

7. The tire pressure monitoring device of claim 6 wherein said conductive

substance is a conductive metal or conductive rubber.

8. The tire pressure monitoring device of claim 1 wherein said signaling means is coupled to a printed circuit board.

9. The tire pressure monitoring device of claim 1 wherein said signaling means is selected from the group consisting of a light emitting diode (LED), a speaker, a radio frequency (RF) transmitter, and a infrared (IR) transmitter.

10. A tire pressure monitoring device for monitoring tire pressure, said tire pressure monitoring device comprising:

a lens, a main housing body, and a lower housing body, wherein

said lens is coupled a first end of said main housing, and said lower housing is coupled to said lower housing body;

said lens at least partially defining a counter-pressure chamber;

said main housing body defining a main pressure chamber having a power supply, a signaling means, and a flexible membrane;

said flexible membrane separating said counter-pressure chamber and said main pressure chamber; and

said lower housing body adapted to engage a tire valve.

11. The tire pressure monitoring device of claim 10 further comprising a screw cap that couples said lens to said main housing.

12. The tire pressure monitoring device of claim 10 further including a conductive Seal provided between said lens and said main body.

13. The tire pressure monitoring device of claim 10 wherein said power supply is at least one battery.

14. The tire pressure monitoring device of claim 10 wherein said signaling means is selected from the group consisting of a light emitting diode (LED), a speaker, a radio frequency (RF) transmitter, and a infrared (IR) transmitter.

15. The tire pressure monitoring device of claim 10 wherein said flexible membrane is a conductive substance.

16. The tire pressure monitoring device of claim 15 wherein said conductive substance is a conductive metal or a conductive rubber.

17. A tire pressure monitoring device for monitoring tire pressure, said tire pressure monitoring device comprising:

a housing, wherein said housing is adapted to engage a tire valve; and

said housing including a means for sensing a pressure differential and a means for signaling said pressure differential.

18. A method of monitoring air pressure within a tire, said method comprising:

providing a tire pressure monitoring device of claim 1;

attaching said tire pressure monitoring device to a tire valve;

calibrating said tire pressure monitoring device;

monitoring a pressure differential between said tire pressure monitoring device and an air pressure of said tire; and

emitting a warning signal when said pressure differential exceeds a predetermined pressure differential.

19. The method of claim 18 wherein said calibrating step further includes allowing air from said tire to enter a counter-pressure chamber of said tire pressure monitoring device and sealing said counter-pressure chamber.

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20. The method of claim ~~19~~ wherein said pressure differential is a difference between the pressure of said counter-pressure chamber and said air pressure of said tire.

Sub Q4

21. The method of claim 20 wherein said warning signal may be a signal selected from the group consisting of a light, a sound, a radio frequency (RF) wave, and an infrared (IR) light.

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22. The method of claim ~~18~~ further comprising:

removing said tire pressure monitoring device to periodically to ensure that said device is properly working.

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23. The method of claim ~~18~~ further comprising:

removing said tire pressure monitoring device from said tire valve;

adding air pressure to said tire; and

reattaching said tire pressure monitoring device to said tire valve.

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24. A valve cap having an interior air pressure supplied through a conventional tire valve, said valve cap comprising:

a transparent top;

a light emitting diode (LED) attached to a printed circuit board;

an upper housing which accommodates the LED and the printed circuit board;

a flexible membrane;

a counter-pressure chamber, wherein the counter-pressure chamber is a space between the transparent top and the membrane;

at least one battery located within the upper housing; and

a lower housing which is internally threaded and adapted to mate with a tire valve

assembly.

23 ~~25~~. A valve cap as defined in claim ~~24~~ 22, wherein the circuit board further comprises flashing circuitry.